# PROPERTY PLANNING COMMON ELEMENTS

## COMPONENTS OF MASTER PLANS

### HABITATS AND THEIR MANAGEMENT

#### Aspen

***Description***

This cover type is comprised of >50% basal area in aspen. Principal species are trembling aspen (also known as quaking aspen) and bigtooth aspen. Aspen occurs throughout the state, though is more abundant in northern Wisconsin than in the south. It grows on a wide variety of landforms and soil conditions, with a variety of other tree and shrub species as a dominant or an associate. Within the aspen cover type, the most common associates currently are red maple, white birch, balsam fir, red oak, and white pine. Most other major tree species occurring in Wisconsin can be found as occasional associates in aspen stands, and vice versa. The shrub layer is variable, depending on the moisture regime and age of the stand, but typically is absent to sparse when stands are young and comprised of dense "dog-hair" thickets of saplings, and gradually increases in density over time. Some clonal species such as American and beaked hazelnut, can persist under moderate shade. The ground layer is similarly variable depending on soil type, moisture regime, past disturbance, and other factors. Aspen is a "pioneer" species that generally grows in even-aged stands regenerated following a major disturbance such as stand-replacing fire, blow-down, or clearcut harvest. It often outgrows other associated species and can form nearly pure stands. In undisturbed or unmanaged stands, aspen is replaced over time by more shade-tolerant associates through succession.

Aspen-dominated forests currently make up a significant proportion of the forested landscape in northern Wisconsin, and aspen is the second most common forest cover type in that region after northern hardwoods. However, virtually all these aspen forests originated due to human-caused disturbance after Euro-American settlement, and occur on sites formerly occupied by very different communities. Historically, aspen would have been a relatively minor component of forests in northern Wisconsin (and even less common in the south), patchily distributed in areas with moderate fire regimes where fire disturbance would have regenerated aspen clones and exposed mineral soil for seed germination. Aspen occupied only about 4% of northern Wisconsin's forests in the early 1800s. However, the very hot slash fires that burned all over the north following the widespread heavy logging of the Cutover period eliminated seedlings of many tree species just as harvest had eliminated the seed sources. Aspen's abundant, wind-dispersed seed allowed it to invade large areas formerly occupied by forest types ranging from spruce-fir to pine barrens. Aspen abundance reached a historic peak in the 1930s and has declined somewhat since then, though it remains far more abundant than in presettlement times.

Young aspen stands provide feeding and hiding cover for a variety of wildlife species, and may provide important post-fledging habitat for mature forest-breeding birds where they occur adjacent to mature forest. Aspen currently receives high management emphasis due to its importance to the forest products industry and to game species such as ruffed grouse, American woodcock, and white-tailed deer.

***Ecological Landscape Opportunities***

| Ecological Landscape | Opportunity* |
|---|---|
| North Central Forest | M |

| Ecological Landscape | Opportunity* |
|---|---|
| Northeast Sands | M |
| Northern Highland | M |
| Northwest Lowlands | M |
| Northwest Sands | M |
| Superior Coastal Plain | M |
| Central Sand Plains | I |
| Forest Transition | I |
| Central Lake Michigan Coastal | P |
| Central Sand Hills | P |
| Northern Lake Michigan Coastal | P |
| Southeast Glacial Plains | P |
| Southwest Savanna | P |
| Western Coulee and Ridges | P |
| Western Prairie | P |

*M = Major: major opportunity exists in this Landscape; many significant occurrences are recorded or restorations likely to be successful.

I = Important: several occurrences important to maintaining the community in the state occur in this Landscape.

P = Present: community is present in the Landscape, but better opportunities exist elsewhere.

***Rare Species***

To learn more about Species of Greatest Conservation Need (SGCN) associated with aspen forests based on the findings in Wisconsin's 2015 Wildlife Action Plan, visit the Northern Forest communities page and click on "Aspen-Birch".

***Threats***

- Aspen currently lacks age-class diversity. The mid-age classes (41-60 years) have declined over the past several decades and the older age classes (61 years and older) are significantly underrepresented. Because aspen is used for food and cover from the seedling-sapling stage to the old-growth stage, a diverse age-class distribution expands the utility of an aspen stand to a wider variety of wildlife.
- Trembling aspen is projected to undergo moderate to significant decreases in habitat suitability across the state, but particularly in northern Wisconsin, due to altered temperature and precipitation patterns associated with climate change.

***Management Techniques***

- Coppice (simple; coppice with standards)
- Overstory removal
- Clearcut
- Site preparation
- Intermediate treatments

- Pesticide treatments

***Management Considerations***

- Consider landscape composition and structure (forest type and species composition; successional stage; age structure; stand/patch size; degree of fragmentation, etc.) when planning individual management actions. A variety of age classes and stand sizes provide wildlife and aesthetic value.
- Within extensively forested landscapes with low 'natural fragmentation' (i.e., heterogeneous landscape with various habitat types, wetlands, water bodies, etc.), particularly within or adjacent to large forest patches with older age-class structure, consider employing actions (e.g., managing for larger stand and larger blocks, increasing connectivity with surrounding forest, aggregating individual cuts) that will reduce the amount of hard edge to minimize fragmentation and reduce impacts on edge-sensitive species.
- Simple coppice or coppice with standards are often used for regeneration. Thinning can help reduce pulpwood rotations and improve sawtimber yields.
- In southern Wisconsin, retain aspen as a component of other forest types where appropriate and feasible and where it does not negatively impact adjacent habitat types (e.g., prairie or sedge meadow).
- In southern Wisconsin, consider conversion to another forest type such as oak or central hardwoods if adequate aspen regeneration is unlikely.
- In mixed stands, maintain or increase tree species diversity, especially of conifers. Retain and encourage longer-lived species such as oaks, white pine, red pine, and hemlock.
- Aspen stands along flowages, lake and stream borders, or as islands in wetlands may require management modifications for aesthetic or ecological (e.g., potential rise in water table if all trees are cut) reasons. Passive management may be employed in some situations.